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THE PRONUNCIATION OF INSECT NAMES.*

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In any assemblage of biologists one can hear a given species called by a range of names, all spelled alike, that is eclipsed only by the changes in the names themselves necessitated by adherence to the law of priority. The tiger beetle, for example, is spoken of as Eieindēla,† Cicindēla, Cicindèla or Cicindela, according as one is trained in Germany, France, America, or is untrained. There is a right and a wrong way of doing things, as applicable to the pronunciation of scientific names as elsewhere. European trained entomologists are more consistent in their pronunciations than the average American, undoubtedly due to the greater emphasis placed on orthography during their school career than is encountered here. However, the pronunciation of foreigners, though correct from their viewpoint, is not the standard in America, and this article is written to call attention to some of the simpler rules governing the proper articulation of the names of insects.

According to the universally accepted rules of nomenclature the names of insects are Latin in construction. Custom has decreed that generic names be formed from Greek roots changed into

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† In this discussion the accented syllable is marked with a grave accent (') for a long vowel and with an acute accent (') for a short vowel. Unaccented short vowels are indicated by a breve (') and unaccented long vowels by a macron (-); 3 indicates the sound of k and c the sound of s; a as in father.

Latin form and used as nouns to be modified by the species names used as Latin adjectives. Not infrequently, however, species names are derived directly from the Greek, as microptera, shortwinged, instead of parvipennis, erythrurus, red-tailed, in place of rufocaudatus, xanthopoda, yellow-legged, in place of flavipes, etc. and sometimes, now not considered in good form, the names of species are merely euphonious combinations of letters. The English entomologist, Francis Walker, was especially prone to use words of no meaning but of pleasing sound, both for his genera and species, such as Sýndyas, Anáxo, Édeta, Ámytis, Dària. Such species terms are generally construed as neo-Latin proper nouns in apposition with the substantive generic name, by which construction they are ascribed an adjectival function. Ordinal and family names are in form Greek plurals. Thus we mention one Orthopteron, two Orthoptera; one Muscid fly but several Muscidæ. However, as cited in binomial nomenclature, all insect names, irrespective of origin, are considered as Latin and are governed by the rules of Latin pronunciation, which are fewer, simpler and more definite than the rules for English pronunciation.

There are three methods in vogue for the pronunciation of Latin, the Roman, the English and the Continental methods. The first of these is at least an approximation to the ancient pronunciation of the language and although taught in many if not most of our schools is almost never used in biological pronunciation. By this method, with its broad vowels and hard consonants, we would say Eieindela, Eieindelidæ, Chætopsis, Geotrupes, Œcánthus.* The Continental method retains the Roman pronunciation of the vowels and diphthongs but gives the consonants as they are used in English, thus: Ciçindèla, Ciçindèlidæ, Chætòpsis, Geotrùpes, Œcánthus. This method likewise is not in vogue in this country for biological pronunciation. As scientific names in the different countries usually follow the pronounciation of the language of the region, in America the English method of speaking Latin has naturally been applied. Accordingly the genera previously cited sound more familiar when called Cicindèla, Chætópsis, Geotrupes and Œcánthus.

^{*} Pronounced as if spelled with the English letters $K\bar{e}$ - $k\tilde{i}n$ - $d\bar{a}$ - $l\dot{a}$, $K\bar{e}$ - $k\tilde{i}n$ - $d\bar{a}$ - $l\bar{e}$ - $d\bar{i}$, $K\bar{i}$ - $t\bar{o}p$ - $c\bar{e}s$, $G\bar{a}$ - \bar{o} - $tr\bar{u}$ - $p\bar{a}s$, Oi- $c\acute{a}n$ -thoos.

It is immaterial which system of pronunciation be adopted by the American entomologist and the following illustrations may be sounded to suit his pleasure. The careful student, however, will endeavor to place the accent on the proper syllable and to assign to the vowels their proper quantity. The following remarks are directed mainly toward the accentuation of generic names. Specific names are mostly pure Latin and can be found in any Latin dictionary, but the names of genera, being compounded usually from several roots, are less familiarly available.

Syllabication. As many syllables are required as there are vowels and diphthongs, the consonants being distributed as far as possible so that each syllable ends in a vowel. Should this result in unpronounceable combinations or interfere with the proper sounding of the vowels the consonents may require shifting. Ci-cin-dè-la, Chæ-tóp-sis, Ge-o-trù-pes, Po-dà-brus, Sphæ-roph-thál-ma; but Ól-i-brus, not Ò-li-brus.

The Roman and Continental methods divide compounded words into their constituent parts when the first part ends in a consonant, but this is not followed in English pronunciation. *Chat-opsis*,

Sphær-ophthalma, Pod-urus, Sphec-odes.

The family termination -ĭ-dæ is treated as an independent suffix even though such isolation sometimes modifies the sound of the preceding vowel. Psŷ-che, Psých-idæ; Pi-è-ris, Pi-ér-idæ; Chry-so-mè-la, Chry-so-mél-idæ; A-pis, Áp-idæ. However, there is abundant, though not consistent, sanction for such pronunciations as Psỳ-chidæ, Piè-ridæ, Chrysomè-lidæ, À-pidæ.

Accent. Polysyllabic names are accented on the penult if that syllable is long in quantity, otherwise on the antepenult. Dissyllabic names are always accented on the first syllable. Ar-gýn-nis,

Ba-si-lár-chi-a, Mòr-pho.

Quantity. The quantity of a syllable, and of a vowel also, measures the time occupied in pronunciation. A syllable, irrespective of its vowel, is long in quantity if its vowel is followed by two consonants, excepting a mute (b, c, d, g, k, p, q, t) plus a liquid (1, r) or by the double consonants x or z. In this case the syllable is long by position, but its vowel is properly pronounced short. Coccinélla, Cybíster, Bryáxis, Platypésa. A syllable is

long by nature if it contains a long vowel or a diphthong. Anàtis, Formica, Hylocàtus, Panagàus.

A syllable is short in quantity if its vowel, not naturally long, is followed by another vowel. Álaus, Dánaus, Lásius, Lèria.

A syllable is common, i. e., it may be considered either long or short, if its vowel, originally short, is followed by a mute and a liquid. Such syllables by preference should be shortened, but in Latin composition especially in poetry they show a tendency toward lengthening. Though comparatively few in number, it is this class of words that gives most perplexity to the entomologist, for until the original quantity of the vowel is known the pronunciation is doubtful. Phálacrus, Ólibrus, Cónnophron, Ránatra, Ómophron, Éphydra, Hydrómetra, Ánabrus, Átropos, Háliplus, Geómetra, Nícocles, Tríprocris, Cutérebra, all have a short vowel in the penult and the accent is thrown forward. Cèbrio, Cràbro, Epòchra, Gymnètron and Tenèbrio are given a long vowel before the mute and liquid, while Arthromàcra may lengthen the penult for easier pronunciation.

Vowels. In most cases vowels are given their customary long or short English sounds without regard to the niceties of intonation required in spoken English. However certain letters and certain positions exercise a modifying effect, as for instance the influence of the letter r on the preceding vowel in Arthròpeas, Élater, Platygáster, Mòrpho, Phòra.

Vowels, irrespective of the length of the syllable, usually have their long English sounds before another vowel or diphthong. Empōásca, Eòis, Epèolus, Herìades, Hepìalus. When occurring in an unaccented or short syllable i and y are given the short sound even when preceding another vowel. Bíbĭo, Bembídĭum, Chàlĭa, Drastèrius, Melándryā. Final a and usually unaccented a are broadened to sound like the final a in Africa. Nómadá, Aèdes.

Diphthongs in quantity are always long, thus when occurring in the penult carry the accent. Passalàcus, Corimelàna, Zaràca. In quality, æ and œ are pronounced like e. $\bar{\mathcal{A}}$ gèria, $\hat{\mathcal{A}}$ schna, $\hat{\mathcal{E}}$ cánthus, $\hat{\mathcal{E}}$ dicnèma, Polystáchotes.

Vowels usually have their short English sounds before two consonants, excepting sometimes a mute and a liquid, and in ac-

cented antepenultimate syllables before one or more consonants. Geócoris, Gómphus, Mācróbasis.

The first factor determining the length of the vowel is its quantity in the original derivation. In the case of e and o of Greek roots this is readily accomplished for the long and short sounds in Greek are indicated by distinct letters, eta and epsilon, and omega and omicron. If the Greek root contains eta or omega the vowel in Latin form must be long. Thus mērós with long e means the femur and méros with short e means a part. The genera derived from the former must be accented on the long penult. Calyptomèrus, Diapheromèra, Œdomèra, Monodontomèrus, Rhopalomèra, Acanthomèra. The divisions of beetles, Heterómera, Pentámera, Trímera, founded on tarsal not femoral characters, and the genus Oligómerus, with few antennal joints, accent the antepenult, while Ephémera, lasting but a day, is an unrelated word with short e in the penult.

Sōma, meaning body, has a long omega in the original; stŏma, meaning mouth, is spelled with the short omicron. Thus Brachysòma, Calosòma, Scaphisòma, but Brachýstoma, Belóstoma, Platýstoma.

The Greek word kĕras, for antenna, is spelled with the short e. Thus, in Acrócera, Bæócera, Criócerus, Heterócerus, Tetanócera, the accent is thrown to the antepenult. But the wasp Cercèris, appropriating the old Latin name of a bird, takes the accent on the long e of the penult.

It is the quantity of the vowel of the penult that gives most concern because the position of the accent is determined by its length.

Apantèsis, Calephèlis, Caloptènus, Cyllène, Periplanèta, Leptotrachèlus, Euthèra, Philerèmus, Phylloxèra, Odynèrus, Metachèla, and Zeuzèra are derived from the long Greek eta in the penult, while Borèus, Cartodère and Diapèris descend from the diphthong ei. Hence all of these have similar accent.

Émesa, Théreva, Eùmenes, Nemótelus, Órmenis, Oxýbelus, Péderus, Polýmedon, Phrygànea, Platýdema, Hypóstena and Sépedon, to mention only a few commonly mispronounced names, have the short epsilon in this position and hence throw the accent forward to the antepenult.

Properly, words ending in -pěza are pronounced with a short e. Micropéza, Platypéza, Tanypéza, Leptopéza. Since in English pronunciation z is no longer the double consonant dz, these words are commonly though improperly given as Micropèza, Platypèza, Tanypèza. In the same group comes Trióza, but usage has made the vowel as well as the syllable long in Chyliza, Pipiza, Myzus and its series of related -myza genera, like Agromýza, Anthomýza, Helomýza, Phytomýza, and Sciomýza.

Names ending in -opus give some confusion until the derivation is known. obs means face, but bous, with root bod, means foot. Œdòpa Psilòpa, Systròpus, Calòpa, Chrysòpa, Desmometòpa come from the former root, while Edopus, Psilopus, Dolichopus. Bythóscopus. Plátypus, Polycéntropus and Gýropus are

names referring to leg structures.

The following generic names are formed with the long Greek omega in the accented syllable. Diabròtica, Diplòsis, Melanòtus, Haplòa, Priònus, Sitònes, Cyrtopògon. Names ending in -odes have an accented penult. Aleyrodes, Eleodes, Oncodes, Or-

neòdes. Melissòdes. Phenaòdes.

The short omicron occurs in the penult of: Agrotis, Chironomus, Dendróctonus, Ómophron, Perícoma, Pleócoma, Pyróchroa, Stenólophus, Sýnchroa, Mèrodon, Tóxotus, Neócota, Xyléborus, Xylócoba. Similarly coris (bug) and toma (temno, cut) throw the accent forward: Geócoris, Leptócoris, Thyreócoris; Hylótoma, Neurótoma, Pentátoma, Tritoma.

The diphthong oi is not found in classic Latin although it is good Greek. Hence when it is brought into Latin form in proper names derived from the Greek the o and i should be separately Hence Culicòides, Sanninoídea, Blattoídea and Coleopteroidea are preferable to pronouncing the oi as in coin.

A class of genera, the pronunciation of which is disputed, includes those founded on personal proper names. Should the pronunciation of the genus name follow Latin rules, thereby often distorting the proper name so as to bear little resemblance to its original form, or should the original pronunciation, even of foreign names, be retained? In as much as such genera are founded as a mark of honor the latter course seems preferable. Some examples follow to show the difficulties experienced with these names: Bruesia, Candezea, Dejeania, Guerinia, Latreillia, Macquartia, Meigenia, Rondania, Schineria, Schönherria, Scudderia, Stålia.

As we have seen the quantity of the radical syllables can often not be determined by rule and must be ascertained by the laborious process of searching Greek and Latin dictionaries. Certain terminations, however, have a common pronunciation, and when used as derivative endings, not as part of the root, give a clew as to accent.

Thus the long penult occurs in:

-ētes, -ētus, -ētis.

Collètes, Corynètes, Colymbètes, Nomarètus, Trypèta, Eutrèta, Synèta, Lithocollètis. (But Drápetis.)

-ītes, -īta, -ītis.

Ægialítes, Myodítes, Rhodítes, Rhinchites, Sphærites, Nebritus, Coptodíta, Galerita, Omosíta, Trogosíta, Doritis, Limenitis, Pyritis.

-ōdes, -ōda.

Aleyròdes, Oncòdes, Orneòdes, Pissòdes, Psychòda, Lyròda.

-ōtus, -ōtes, -ōta, -ōtis.

Chrysòtus, Odontòta, Pyrgòta, Xylòta, Chyphòtes, Lucidòta, Plusiòtis.

-ānus.

Lucànus, Silvànus, Tabànus. (These are of Latin origin. The Greek Stéphanus, Drépana, Ídana, have a short penult. Chrysophànus has a long penult from the Greek phaino.) The short penult occurs in:

-ulus, -ula.

Pipúnculus, Plenóculus, Forfícula, Libéllula, Nitídula, Típula.

-olus, -ola.

Epèolus, Mayetìola, Reduviolus, Tinèola. (Mineòla is apparently an Indian name.)

-alus, -ela.

Anómala, Hárpalus, Liáncalus, Tríbalus Cístela Rùtela (Latin, rutilis). Hepìalus is in Greek Hepiolos and belongs in the preceding section. In Pteromàlus and Catocàla the long a belongs to the stem.

-ales, -alis, -eles.

Anópheles, Cerópales, Corýdalis, Eristalis, Eupsalis, Pýralis, Órtalis, Sialis. But -ālis used in species names accents the penult: farinàlis, discàlis, purpuràlis. Nócheles, Apánteles, Lophóteles, Conótelus have a short e of the root in the penultimate syllable:

-ides, -īades.

Heriades, Dalcérides, Mystácides, Nisoniades. But Iphiclides, from the Greek Iphikleidēs, according to a special rule affecting patronymics ending in -ēs (Iphikleēs).

-ion.

Ágrion, Ápion, Chlòrion, Elaphídion, Óphion, Zòdion. But Diprìon (prion, saw). When such words come directly into English from the Greek the penult is pronounced long, e. g. Orìon.

-arus, -aris.

Āmara, Hílara, Scìara, Chálarus, Cántharis, Hémaris. In Trichobàris the long a belongs to the stem.

-eva.

Théreva, Chóleva, Lésteva, Átteva.

-ica.

Háltica, Sérica, Podàgrica, Tómicus.

Names ending in -inus, -ina are perplexing. Among the most familiar the following have a long penult: Balaninus, Blapstinus, Brachinus, Carposina, Clivina, Gyrinus, Hæmatopinus, Harrisina, Lycoperdina, Mellinus, Pelecinus, Saprinus, Staphylinus. The Latin name Licinus and the Greek forms Cerátina, Scenópinus, Thinópinus, Xanthólinus, Táchina and Táchinus have the penult short. Subfamily and tribal names ending in -inæ, -ini, have a long penult; thus, Carabinæ, Harpalini.

The following list includes a miscellaneous set of names often mispronounced: Ancỳlis, Ánthicus, Antispila, Brachýstegus, Calìgo, Callidryas, Calligrapha, Cerópales, Cùcujus, Chauliógnathus, Chelònus, Chermes, Schizoneura (Greek ch is always like k), Coeçinélla, Dìplax, Émesa, Endomýchus, Eròtylus, Eùdamus, Eurèma, Eùrymus, Feníseca, Graptólitha, Hippodamia, Hýpatus, Icèrya, Lagòa, Lepidósaphes, Lophýrus, Lyméxylon, Macròphya,

Megaspilus, Megathymus, Mycetóchares, Myrmica, Nématus, Nemógnatha, Nómada, Opóstega, Oxýptilus, Pachýbrachys, Paleácrita, Pemphigus, Pieris, Ponèra, Sitotròga, Stenòma, Sýstena, Tachýporus, Tétracha, Trypóxylon, Typhlócyba, Ypsólophus.

The family termination -idæ, meaning like, is added to the root of the typical genus. The i is short, so the accent precedes this suffix: Carábidæ, Cárabus-like; Dytíscidæ, Dytíscuṣ-like. When the root differs from the nominative the family name may become lengthened: Lepismátidæ, based on the genus Lepísma; Belostomátidæ, based on Belóstoma; Calamocerótidæ, based on Calamócerus. But Apiocéridæ, Leptocéridæ, Tetanocèridæ have had such long usage that to use Apiocerátidæ, etc., would appear pedantic. Genera like Acrídium, Anthomyia, Cecidomyia and Stratiomyia form the family names Acridiidæ, Anthomyidæ, Cecidomyidæ and Stratiomyidæ. To unite the īĭ would produce a long vowel, resulting in such words as Acrididæ, Anthomyidæ, Cecidomyidæ, more awkward than the cumbersome longer form.

Finally, in determining the pronunciation, the most useful single rule, especially for those familiar with spoken Spanish, is to regard the accent as recessive, considering the penultimate vowel as short unless there is good reason for believing it long.

ON THE OCCURRENCE OF VESPA AUSTRIACA PANZER IN THE NORTHEASTERN UNITED STATES.

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There are many facts in the taxonomy and still more in the lifehistories of the common American wasps (Vespa) which need a thorough revision. The following small contribution is madewith the hope of interesting other entomologists in the subject. During the last summer, the writer made a point of capturing all the specimens of wasps he met with on his collecting trips, but the result as a whole was very poor, 1916 apparently not being a wasp-year. However, amongst the catch were found two females which he was unable to refer to any of the species previously